

CLAIMS

What is claimed is:

1. A terminal for use in a communication system comprising:
 - a coder having an input terminal for receiving an input signal, and an output terminal for providing a coded signal;
 - an upconverter core having a first input terminal for receiving a first signal having predetermined spectral content at an input frequency and an output terminal for providing an output signal having substantially said predetermined spectral content at a higher frequency using a local oscillator signal having a carrier frequency;
 - an electrical measurement circuit having an input terminal coupled to said output terminal of said upconverter core, and a first output terminal for providing a first offset correction signal representative of a power of said output signal at said carrier frequency; and
 - a first summing device having a positive input terminal for receiving said coded signal, a negative input terminal coupled to said first output terminal of said electrical measurement circuit, and an output terminal coupled to said first input terminal of said upconverter core for providing said first signal.
2. The terminal of claim 1 wherein said coder comprises:
 - a forward error coder having an input terminal for receiving said input signal, and an output terminal; and
 - a line coder having an input terminal coupled to said output terminal of said forward error coder, and an output terminal for providing said coded signal.

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3. The terminal of claim 2 wherein said coder further comprises:
 - a speech coder having an input terminal for receiving a speech signal, and an output terminal coupled to said input terminal of said forward error coder.
4. The terminal of claim 1 further comprising:
 - an antenna coupled to said output terminal of said upconverter core.
5. The terminal of claim 4 further comprising:
 - a receiver having an input terminal coupled to said antenna, and an output terminal for providing a received signal.
6. The terminal of claim 5 wherein said receiver comprises:
 - an RF receiver and downconverter having an input terminal coupled to said antenna, and an output terminal;
 - a decoder having an input terminal coupled to said output terminal of said RF receiver and downconverter, and an output terminal for providing said received signal.
7. The terminal of claim 1 characterized as being part of a cellular telephone handset wherein the communication system further comprises a cellular antenna operatively coupled to said cellular telephone handset.
8. The terminal of claim 1 wherein the communication system is characterized as being a time division multiple access (TDMA) communication system.
9. The terminal of claim 8 characterized as being a satellite modem wherein the communication system further comprises a satellite operatively coupled to said satellite modem.

10. The terminal of claim 8 wherein the communication system is further characterized as being a Global System for Mobile Communication (GSM) system.
11. The terminal of claim 1 wherein said electrical measurement circuit comprises:
 - a first mixer having a first input terminal for receiving said output signal, a second input terminal for receiving said local oscillator signal, and an output terminal; and
 - a first integrator having an input terminal coupled to said output terminal of said first mixer, and an output terminal for providing said first offset correction signal.
12. The terminal of claim 11 wherein said electrical measurement circuit further comprises:
 - a storage element having an input terminal coupled to said output terminal of said first integrator, and an output terminal; and
 - a switch having a first terminal for providing said first output terminal of said electrical measurement circuit, and a second terminal alternately coupled to said output terminal of said first integrator during a calibrate period and to said output terminal of said storage element during an operate period.
13. The terminal of claim 1 wherein said upconverter core further has a second input terminal coupled to said coder for receiving a second signal characterized as being in quadrature with said first signal and further provides said output signal by converting said second signal to said higher frequency using a quadrature local oscillator signal having said carrier frequency.

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14. The terminal of claim 13 wherein said upconverter core comprises:
 - a first mixer having a first input terminal for receiving said first signal, a second input terminal for receiving said local oscillator signal, and an output terminal;
 - a second mixer having a first input terminal for receiving said second signal, a second input terminal for receiving said quadrature local oscillator signal, and an output terminal;
 - a phase shifter having an input terminal for receiving said local oscillator signal, and an output terminal coupled to said second input terminal of said second mixer for providing said quadrature local oscillator signal; and
 - a summing device having a first positive input terminal coupled to said output terminal of said first mixer, a second positive input terminal coupled to said output terminal of said second mixer, and an output terminal for providing said output signal.
15. The terminal of claim 13 wherein said electrical measurement circuit further has a second output terminal for providing a second offset correction signal representative of a power of said output signal at said carrier frequency and in quadrature with said first offset correction signal, and the terminal further comprises a second summing device having a positive input terminal for receiving a second input signal, a negative input terminal coupled to said second output terminal of said electrical measurement circuit, and an output terminal coupled to said second input terminal of said upconverter core for providing said second signal.

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16. The terminal of claim 15 wherein said electrical measurement circuit further comprises:
 - a second mixer having a first input terminal for receiving said output signal, a second input terminal for receiving said quadrature local oscillator signal, and an output terminal; and
 - a second integrator having an input terminal coupled to said output terminal of said second mixer, and an output terminal for providing said second offset correction signal.
17. The terminal of claim 16 wherein said electrical measurement circuit further comprises:
 - a second storage element having an input terminal coupled to said output terminal of said second integrator, and an output terminal; and
 - a second switch having a first terminal for providing said second output terminal of said electrical measurement circuit, and a second terminal alternately coupled to said output terminal of said second integrator during a calibrate period and to said output terminal of said second storage element during an operate period.

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18. A terminal for use in a communication system comprising:

means for coding an input signal to provide a coded signal;

an upconverter core having a first input terminal for receiving a first signal having predetermined spectral content at an input frequency and an output terminal for providing an output signal having substantially said predetermined spectral content at a higher frequency using a local oscillator signal having a carrier frequency;

an electrical measurement circuit having an input terminal coupled to said output terminal of said upconverter core, and a first output terminal for providing a first offset correction signal representative of a power of said output signal at said carrier frequency; and

a first summing device having a positive input terminal for receiving said coded signal, a negative input terminal coupled to said first output terminal of said electrical measurement circuit, and an output terminal coupled to said first input terminal of said upconverter core for providing said first signal.

19. The terminal of claim 18 further comprising:

an antenna coupled to said output terminal of said upconverter core.

20. The terminal of claim 19 further comprising:

a receiver having an input terminal coupled to said antenna, and an output terminal for providing a received signal.

21. The terminal of claim 20 wherein said receiver comprises:

an RF receiver and downconverter having an input terminal coupled to said antenna, and an output terminal;

a decoder having an input terminal coupled to said output terminal of said RF receiver and downconverter, and an output terminal for providing said received signal.

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22. The terminal of claim 18 characterized as being part of a cellular telephone handset wherein the communication system further comprises a cellular antenna operatively coupled to said cellular telephone handset.
23. The terminal of claim 18 wherein the communication system is characterized as being a time division multiple access (TDMA) communication system.
24. The terminal of claim 23 characterized as being a satellite modem wherein the communication system further comprises a satellite operatively coupled to said satellite modem.
25. The terminal of claim 23 wherein the communication system is further characterized as being a Global System for Mobile Communication (GSM) system.

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26. A communication system comprising:
 - a plurality of terminals; and
 - a communication hub for being operatively coupled to said plurality of terminals;

wherein at least one of said plurality of terminals comprises:

 - an upconverter core having a first input terminal for receiving a first signal having predetermined spectral content at an input frequency and an output terminal for providing an output signal having substantially said predetermined spectral content at a higher frequency using a local oscillator signal having a carrier frequency;
 - an electrical measurement circuit having an input terminal coupled to said output terminal of said upconverter core, and a first output terminal for providing a first offset correction signal representative of a power of said output signal at said carrier frequency; and
 - a first summing device having a positive input terminal for receiving an input signal, a negative input terminal coupled to said first output terminal of said electrical measurement circuit, and an output terminal coupled to said first input terminal of said upconverter core for providing said first signal.
27. The communication system of claim 26 wherein said at least one of said plurality of terminals comprises:
 - an antenna coupled to said output terminal of said upconverter core and operatively coupling said at least one of said plurality of terminals to said communication hub.
28. The communication system of claim 27 further comprising:
 - a receiver having an input terminal coupled to said antenna, and an output terminal for providing a received signal.

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29. The communication system of claim 26 wherein each of said at least one of said plurality of terminals comprises:
 - a coder having an output terminal for providing a coded signal to said positive input terminal of said first summing device.
30. The communication system of claim 26 wherein each of said plurality of terminals comprises a cellular telephone handset and wherein said communication hub comprises a cellular base station antenna.
31. The communication system of claim 26 wherein each of said plurality of terminals are operatively coupled to said communication hub using time division multiple access (TDMA) communication.
32. The communication system of claim 31 wherein each of said plurality of terminals comprises a satellite modem and wherein said communication hub comprises a satellite.
33. The communication system of claim 31 wherein each of said plurality of terminals is operatively coupled to said communication hub using Global System for Mobile Communication (GSM) transmission.

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34. A method for transmitting a signal between a first terminal and a second terminal over a communication medium in a communication system comprising:
 - converting a first signal having predetermined spectral content from an input frequency to a higher frequency using a local oscillator signal having a carrier frequency and providing an output signal having substantially said predetermined spectral content in response thereto;
 - electrically measuring a power of said output signal at said carrier frequency and providing a first offset correction signal in response thereto;
 - subtracting said first offset correction signal from a first input signal to provide said first signal;
 - transmitting said output signal to the second terminal over the communication medium; and
 - receiving said output signal from said communication medium at the second terminal.
35. The method of claim 34 wherein said transmitting comprises radiating said output signal over the communication medium using an antenna.
36. The method of claim 34 further comprising:
 - coding a second input signal to provide said first input signal.
37. The method of claim 36 wherein said coding said second input signal comprises modulating.
38. The method of claim 37 wherein said coding said second input signal further comprises forward error coding.
39. The method of claim 38 wherein said coding said second input signal further comprises source coding.

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40. The method of claim 34 wherein said receiving comprises receiving said output signal from the communication medium at a satellite.

41. The method of claim 34 wherein said receiving comprises receiving said output signal from the communication medium at a cellular base station.